

Memo

Date: February 14, 2007

To: Distribution

From: Director of Health, Ledge Light Health District

RE: Procedures for On-Site Subsurface Sewage Disposal and Wells for the Ledge Light Health District

Ledge Light Health District (LLHD) has grown from four to six municipalities over the past two years. This expansion has created a need to standardize how we regulate onsite subsurface sewage disposal (septic systems). LLHD has previously issued procedures and requirements for onsite subsurface sewage disposal (see attached 10/14/04-revised 2/14/07 and 10/20/05-revised 2/14/07 policies) and with the recent revision to the Technical Standards, this is the perfect opportunity to clarify our procedures. The following required items will take effect the date of this letter and are based on **Connecticut Public Health Code** (the Code) Section 19-13-B100a, B103, Technical Standards revised 1/1/07 and B104 (http://www.dph.state.ct.us/BRS/Sewage/sewage_program.htm) which outlines the minimum duties of directors of health and/or registered sanitarians to conduct site investigations, review plans, issue approvals, conduct site inspections and/or issue permits for subsurface sewage disposal systems and/or water supplies.

Definitions:

1. **Approval:** statement that an individual lot plan meets the Connecticut Public Health Code for on-site subsurface sewage disposal and water and permits can be issued
2. **Areas of Special Concern:** parcels or lots which meet the requirements of Connecticut Public Health Code Section 19-13-B103d (e)
3. **Certified LLHD agent:** employee of the LLHD who meets the requirements of Section 19-13-B103e (b) (2)
4. **Deep test hole:** Hole dug to identify the naturally occurring soil profile (soil types, depth to ledge, groundwater and restrictive layers) in order to design a septic system. Deep test holes should be dug with shelves/ramps to allow the investigators to safely assess the soil profiles and/or shallow holes (2-3') can be dug to observe the upper layers and then excavated to a depth of at least 4' below the proposed septic area to verify depth to ledge. Test holes should be witnessed during the wet season to determine the maximum level of groundwater.
5. **Guidance plan:** A plan designed by a Connecticut professional engineer (PE) to prepare a lot which has potentially suitable soils with select fill (at the risk of the property owner) that may create a leaching system area (see definition) with 4' to ledge rock. A Certified LLHD agent will review the plan and make comments but no statement of suitability or approval will be issued until the leaching system area (see definition) has been prepared according to plan and inspected by a Certified LLHD agent. A guidance plan must include all elements of an engineered plan review and the proposed leaching system area must be staked by a Connecticut licensed surveyor (LS) with a benchmark and filling grades prior to the stripping of topsoil.
6. **Leaching system area:** soil in and within 10' in all directions from the side edge of the proposed leaching structure, typically used for site suitability concerning depth to ledge rock
7. **Parcel:** single or series of lots submitted to the LLHD for review and/or comment
8. **Percolation test:** see Technical Standards section VII. Percolation tests are to be conducted by a Certified LLHD agent, PE and/or agent of a PE.
9. **Potentially suitable soil:** the leaching system area for on-site subsurface sewage disposal where there is less than 4' of soil above ledge rock but at least 2' of which is naturally occurring soils. Potentially suitable soils may be made suitable, at the risk of the property owner, with a guidance plan and site preparation
10. **Project lead:** A Certified LLHD agent who is responsible for all regulatory aspects of a parcel. The project lead may allow other Certified LLHD agents to conduct inspections and issue permits, but the project lead is ultimately responsible for the regulatory Code activities for the property
11. **Septic installer:** an individual with a current and valid subsurface sewage installer's license from the State of Connecticut Department of Public Health and/or the owner of the property on which a subsurface sewage installation is proposed
12. **Site investigation:** soils testing, percolation tests, ledge profiles, groundwater monitoring, hydraulic analysis, locating proposed/existing water supplies and septic systems, identifying wetlands/watercourses and/or inspections
13. **Suitability:** statement indicating a parcel is potentially capable of meeting the Connecticut Public Health Code for on-site subsurface sewage disposal and water based on the design flow of the property (recommended for subdivision)
14. **Unsuitable conditions:** soils that are impervious, where there is less than 4' depth of suitable existing soils over ledge rock, where there is less than 18" depth of suitable existing soil over impervious soils, where the groundwater level is less than 18 inches below the surface of the ground for a duration of one month or longer during the wettest season of the year, and/or where the surrounding naturally occurring soil cannot adequately absorb or disperse the expected volume of sewage effluent without overflow, breakout or detrimental effect on ground or surface water-Connecticut Public Health Code Section 19-13-B103e (a).

Site investigations: 19-13-B103e and Technical Standards Section VII & VIII

- LLHD will assure the accuracy of new parcel site investigations by requiring a Certified LLHD agent AND a PE, LS, Connecticut certified soils scientist (and/or designated agent of said individuals who is approved by the LLHD) are present for site investigation. The Certified LLHD agent and PE, LS, soils scientist (or their designated agent) are to record the site investigation data and every attempt will be made to assign the Certified LLHD agent who conducts the site investigation as project lead. Application for site investigation is to be made to LLHD at least 24 hours prior to the proposed investigation, include the necessary fee for soils testing and should provide a map of the parcel showing: property lines, watercourses, ledge outcrops, neighboring wells/water lines and septic systems, potential testing locations and contours. Any investigation conducted without a Certified LLHD agent may require additional site investigation prior to determination of suitability (subdivision) or approval (single lot). LLHD may require a PE be present for lots determined to be an area of special concern.
- A minimum of two deep test holes and two percolation tests (one in the primary and one in the reserve) are required to determine suitability of all new or undeveloped parcels. A minimum of one deep test hole and one percolation test are required for repairs, alterations and additions to leaching systems. This is a minimum requirement (further testing may be recommended) and a Certified LLHD agent may require additional testing if the parcel is an area of special concern or other conditions warrant further investigation.
- A Certified LLHD agent may require monitoring through the wet season by a PE and/or groundwater drainage installation prior to the determination of suitability/approval for parcels where unsuitable conditions relating to groundwater are observed. Monitoring and/or groundwater drainage may also be required where site conditions indicate maximum groundwater may be >18".

Single Lot Plan Review:

- All new single lots shall be submitted for review to the LLHD with a site plan, completed fee for service application with plan review fee and a copy of the proposed house/building to verify design flow and footprint. If a project lead has not already been assigned, it will be done shortly after submission. New lots determined as areas of special concern are to be designed by a PE and shall meet the requirements of the "LLHD Engineered Single Lot Plan Review Checklist."
- All new non-engineered, repair and septic alteration plans shall meet the requirements of the attached "LLHD Non-Engineered Plan Review Checklist."
- All plans submitted to LLHD will be reviewed in the order they are received and decisions of suitability/approval forwarded to the designer, town and property owner (if contact information is provided).
- Any lot with a proposed design flow $\geq 2,000$ gal/day will require review by the Department of Public Health. Any lot with a proposed design flow of $> 5,000$ gal/day, utilize land treatment and disposal, a community system and/or utilize alternative technology will require review by the Department of Environmental Protection. If review is required by these departments, an additional site plan shall be submitted to LLHD along with any fees for state review. LLHD will forward the plans, fees and our comments to the State agency for review and will not issue an approval for said lots or issue any permits until the State agency has issued their approvals.
- A well permit, completed by a licensed well driller, must be submitted to and approved by the LLHD prior to any well construction (new, hydrofrac or abandonment). Dug wells may be abandoned by the property owner with application to and approval from the LLHD and the Department of Consumer Protection.
- Any lot with a proposed well that will serve 25 or more persons (not necessarily the same people) for at least 60 days per year will require review by the Department of Public Health Water Supplies Division prior to approval. Review by the Water Supplies Division shall be only for the proposed well and not for septic or sewers.
- No new potable well permit shall be issued for any parcel when any boundary of the parcel of property is within 200', measured along a street, alley or easement, of any approved water supply having at least 15 service connections or regularly serving at least 25 individuals (19-13-B51m). A new potable well permit can be issued to replace an existing potable well having water quality and/or quantity issues, even when it is within 200' of a water supply. A parcel owner may seek an exception to 19-13-B51m from the Department of Public Health Drinking Water Division (through LLHD) and the applicant is to see a Certified LLHD for further information.
- A property served by or having access within 200' of a water system may submit application for a well dedicated **only** for irrigation, and a permit may be issued by the LLHD, assuming the following are addressed and approved:
 - that there be no physical interconnection between the non-potable irrigation piping system and potable plumbing,
 - that a reduced pressure vacuum breaker device be installed on the system to protect the potable system in the event that an unauthorized connection is made,
 - that identifying tags or signs be affixed to, or adjacent to, all exterior spigots served by the irrigation well. The tags or signs would indicate that the water is not potable, i.e. not suitable for drinking,
 - that the non-potable water lines not be brought into the building where the potable supply is installed.
- Any proposed geothermal well shall meet any and all requirements of the Connecticut Department of Public Health.

Septic/Site Inspections: 19-13-103e (g) & Technical Standards II B-E

- All new septic installations, additions and repairs will require inspections and permits issued by the LLHD.
- Only a septic installer may sign for, and obtain, a permit to construct a subsurface sewage system.
- The septic installer who signs for the permit is responsible for the system installation, notifying the project lead 24 hours in advance of any site work (448-4882) and providing any required sieve analysis prior to the placement of fill.
- The minimum inspections shall include:
 - a. Site visit-Verify benchmark, system stakeout and/or strip of topsoil in leaching area (if system requires fill)
 - b. Final inspection-Verify the system was installed as per the approved plan
 - c. Additional inspections may be required (based on complexity of system and site)
- The septic installer is to notify the project lead at the time of permit application of any installer apprentices for the project and the septic installer is responsible to supervise the apprentices. Certified LLHD agents may refuse to sign-off on a project for the apprentice if the project was not completed in a satisfactory manner.
- The permitted installer is responsible for installing the system as per plan and notifying the designer and LLHD when issues arise that limit the ability to install per plan.
- The licensed installer, PE or LS are responsible for submitting an as-built that meets the requirements of the attached 10/14/04-revised 2/14/07 as-built memo within 30 days of the final inspection.

Select Fill: Technical Standards VIII A

- The licensed installer is responsible for preparing the leaching area with necessary select fill.
- Select fill must meet the sieve requirements of the Technical Standards VIII A. Sieve tests can be conducted by professional engineers, soil scientists, geologists, and certified laboratories so long as their accreditation is submitted to the LLHD and their procedure follows the Technical Standards VIII A. **Sieve tests shall be conducted and results submitted to the LLHD at least every 30 days (unless the supplier verifies in writing that the fill was removed from stockpiled material that met the State specifications for select fill within the past 90 days).** A Certified LLHD agent can have the onsite fill tested if they have reason to believe the material is not equal to that of the submitted sieve analysis. Failure of onsite fill to meet the state specifications may result in the removal of any installed fill and/or leaching area.
- Any proprietary leaching system requirement for sand that differs from the state requirements for select fill shall also be submitted to the LLHD and meet the specified requirements of the proprietary leaching product designer with the same frequency as select fill.
- The design engineer can approve select fill which does not meet the state specifications, however, a design engineer cannot approve fill exceeding 6% passing the #200 wet sieves.

Stone aggregate and Two (2) inch nominal tire chip aggregate: Technical Standards I P & R.

- The January 1, 2007 specifications for stone aggregate and two inch nominal tire chips shall be utilized by the LLHD.

We encourage all engineers, surveyors and installers to download the recently updated Connecticut Public Health Code Technical Standards, our septic procedures, plan review checklists, as-built requirements, subdivision requirements and 2007 fill/aggregate specifications at http://www.ledgelighthd.org/regs_licensing/septic_system.htm and septic permits at <http://www.ledgelighthd.org/forms/forms.html>. If you have any questions or concerns, please contact any LLHD sanitarian at (860) 448-4882.

Francis L. "Sam" Crowley, MPH, JD
Director of Health

Distribution: Professional Engineers and Licensed Surveyors
Licensed Septic Installers
East Lyme, Groton, Ledyard, New London and Waterford Building/Planning/Zoning Officials
Ledge Light Health District Sanitarians
Department of Public Health Environmental Engineering Program

Memo

Date: October 14, 2004-Revised February 14, 2007
To: Distribution
From: Director of Health, Ledge Light Health District
RE: Clarification on Septic System As-Built Plan Requirements

The **Connecticut Public Health Code** Section 19-13-B103e (g) (4) and (h) (1) and **Technical Standards** Section II state that a record plan (as-built) of a sewage disposal system is required to be submitted to and approved by the local health department prior to issuing a permit to discharge. An as-built is to be prepared and submitted by the permitted installer **unless** the local health director/authorized agent require an engineer to be on-site at the time of construction. The design engineer must submit the as-built when he/she is required to be on-site.

A permit to discharge for **all new, repairs, alterations or extensions of a septic system** will not be issued by the Ledge Light Health District (LLHD) until the design plan has been approved, a septic permit has been issued, all required inspections have been conducted and approved by the LLHD and an as-built has been submitted to the LLHD by the permitted installer, design engineer or a licensed surveyor. The as-built must include, at a minimum, the following:

1. The installer's, engineer's and/or surveyor's name and contact information.
2. The address and location of the house, with the number of bedrooms, garage and all other structures on the property; a directional arrow (north) and/or a reference to a road or landmark.
3. Dimensions taken from two fixed points (i.e. corners of the house) to all components of the septic system and water supply including:
 - a. The house sewer line at the foundation and the distance between the two fixed points.
 - b. Septic tank cleanouts and/or the inlet and outlet of the septic tank.
 - c. All distribution boxes and other cleanouts.
 - d. The ends of all leaching rows.
 - e. All wells and/or the public water line.A plan drawn to a specified scale, with or without dimensions from two fixed points, is also acceptable.
4. The capacity of the septic tank, as well as the length, type and effective leaching area of the leaching structures.
5. Water collection drains (footing, curtain and/or road drainage), the type of pipe used and their proximity to wells and the septic system.

In addition, to issue a permit to discharge without "unreasonable delay" as stated in Section 19-13-B103e. (k) (1), the as-built must be submitted to the LLHD within 30 days of the final system installation. Upon expiration of the 30 day period, a reminder letter will be sent to the installer/engineer/surveyor and the Department of Public Health.

If you have any questions or concerns, please contact any LLHD sanitarian at (860) 448-4882.

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Director of Health

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East Lyme, Groton, Ledyard, New London and Waterford Building Officials
Ledge Light Health District Sanitarians
Department of Public Health Environmental Engineering Program

Memo

Date: October 20, 2005-Revised February 14, 2007

To: Distribution

From: Director of Health, Ledge Light Health District

RE: Clarification on Subdivision Submission Requirements

Ledge Light Health District (LLHD) receives numerous requests from city/town commissions, boards, and departments to review and provide comments on subdivisions and multiple-lot submissions for suitability to the Connecticut Public Health Code (the Code). This is an opportunity to standardize our services across the municipalities, minimize future issues regarding eventual build-out of lots, and expedite the review process by reducing misunderstandings concerning what is required. The basis for the following list of LLHD required items is based on Connecticut Public Health Code Section 19-13-B103e (a) and (e) and Technical Standards for Subsurface Sewage Disposal Revised 1/1/07, which outlines the minimum duties of directors of health and/or registered sanitarians for subsurface sewage disposal systems and/or water supplies.

All applicants of subdivision and/or multiple-lot plan reviews shall provide the following information to the LLHD in order to receive plan review and **recommended suitability** of the lots according to the Code:

1. The applicant shall submit a completed LLHD fee for service form with the necessary plan review fee to the LLHD (forms are available at all District offices).
2. A scaled plan (no greater than 1"-40' for lots and 1"-100' for overview) designed by a licensed surveyor and/or professional engineer shall be submitted that contains contact information for the designer, date of plan, revision dates and official stamp and signature by said individual (s).
3. All property lines, watercourses, ledge/rock outcrops and cuts shall be located and identified on the plan. In addition, all wetland delineation/soil types required by the municipality shall be provided on the plan.
4. The plan must provide existing contour/spot grade elevations. The maximum delineation of ground contours for LLHD subdivision review shall be no greater than 5'.
5. Locate and provide on the plan all information for all site investigations (see definition in 2/14/07 "Procedures" Memo) for the submitted lots. All testing within 10' of the proposed subsurface sewage disposal system and within 50' down slope of the proposed subsurface sewage disposal system will be utilized for the review, but a minimum of two deep test holes (at least 4' deeper than the proposed system) and two percolation tests (depth based on restrictive layers found in the test pits) must be witnessed by individuals discussed under "Site investigations: 19-13-B103e and Technical Standards Section VII & VIII" of the February 14, 2007 LLHD Procedures memo. This is a minimum requirement (further testing is recommended) and a Certified LLHD agent may require additional testing/monitoring/drainage installation if the parcel is an area of special concern or other conditions warrant further investigation.
6. The septic tank and leaching area (primary and reserve) or sewer connection shall be located and described (i.e., size and type) on each building lot to a scale that meets the required length, width and separation distances of the Code.
7. The Minimum Leaching System Spread (MLSS) calculation (a possible precursor to hydraulic analysis) is to be included and achieved for each lot with an average restrictive layer in and within 50' down slope of the proposed leaching area $\leq 60"$ below naturally occurring grade. Any lot with an average restrictive layer $> 60"$ shall have a note that MLSS is not required by the Code.
8. A building structure shall be located on each proposed building lot with the use (bedrooms) and be of approximate scaled size.
9. All buildings shall indicate if footing drains/curtain drains will be provided, and if so shall show their location and location of the discharge pipes. All Code required separation distances shall apply.
10. Show the location of the water supply (well and/or waterline) and underground utilities of all lots and ensure that they meet all separation distances indicated in the Code.
11. All water supplies, septic system, buildings, and drains on neighboring properties shall be located and identified on the plan. If such items are located further from the proposed buildings, water supplies, drains and/or septic systems than required by the Code, this shall be stated with a note on the plan.
12. Applicant should be aware that subdivision review IS NOT sufficient for individual lot approval. Each lot must be reviewed by LLHD at the time of building permit application in order to obtain lot approval and issue a septic/well permit.

If you have any questions or concerns, please contact any LLHD sanitarian at (860) 448-4882.

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